WHAT IS CLAIMED IS:

1. A data receiving apparatus for receiving and demodulating data modulated in a pseudo-ternary form which is transferred over signal line pair in which a transformer is inserted, the data modulated in the pseudo-ternary form taking either of the three values: a first value by which current is allowed to flow in a positive direction in the transformer; a second value by which current is allowed to flow in a negative direction in the transformer; and a third value by which no current is allowed to flow in the transformer, comprising:

a first comparator configured to make a comparison between potentials on the paired signal lines connected with the secondary winding of the transformer to produce a signal indicating whether data of the first value has been received or not;

a second comparator configured to make a comparison between potentials on the paired signal lines connected with the secondary winding of the transformer to output a signal indicating whether data of the second value has been received or not;

a first detector configured to sample the output signal of the first comparator at regular sampling intervals and to compare the value of the current sample with the value of a sample of one sampling interval before to produce a signal indicating whether

an output signal indicating the reception of data of the first value has been produced from the first comparator;

a second detector configured to sample the output signal of the second comparator at the regular sampling intervals and to compare the value of the current sample with the value of a sample of one sampling interval before to produce a signal indicating whether an output signal indicating the reception of data of the second value has been produced from the second comparator; and

an output circuit connected to receive the output signals of the first and second detectors, configured to produce demodulated data corresponding to the data modulated in the pseudo-ternary form.

2. The data receiving apparatus according to claim 1, wherein the first comparator has its positive and negative inputs connected to the positive- and negative-side signal lines, respectively, of the signal line pair connected to the secondary winding of the transformer, and the second comparator has its positive and negative inputs connected to the negative- and positive-side signal lines, respectively.

3. The data receiving apparatus according to claim 1, wherein the first detector includes a first sample-and-hold circuit which has its input connected to the output of the first comparator and is driven by

sampling clock pulses the period of which corresponds to the sampling interval, a second sample-and-hold circuit which has its input connected to the output of the first sample-and-hold circuit and is driven by the sampling clock pulses, and a logic gate circuit connected to receive the output signals of the first and second sample-and-hold circuits, configured to output a signal indicating whether an output signal indicating the reception of data of the first value has been produced from the first comparator.

4. The data receiving apparatus according to claim 3, wherein the second detector includes a third sample-and-hold circuit which has its input connected to the output of the second comparator and is driven by the sampling clock pulses, a fourth sample-and-hold circuit which has its input connected to the output of the third sample-and-hold circuit and is driven by the sampling clock pulses, and a logic gate circuit connected to receive the output signals of the third and fourth sample-and-hold circuits, configured to output a signal indicating whether an output signal indicating the reception of data of the second value has been produced from the second comparator.

5. The data receiving apparatus according to claim 1, further comprising a clock data receiving circuit connected to receive clock data modulated in the pseudo-ternary form and transferred over clock

signal line pairs in which a transformer is inserted, the clock data receiving circuit having a clock generator responsive the received clock data, configured to produce clock pulses that defines the sampling interval.

6. The data receiving apparatus according to claim 1, further comprising:

a first toggle circuit, connected between the first comparator and the first detector, configured to be triggered by the first comparator each time the first comparator produces a signal indicating the reception of data of the first value, and to change the output state from one of logic levels 0 and 1 to the other; and

a second toggle circuit, connected between the second comparator and the second detector, configured to be triggered by the second comparator each time the second comparator produces a signal indicating the reception of data of the second value, and to change the output state from one of logic levels 0 and 1 to the other.

7. The data receiving apparatus according to claim 2, further comprising a first bias circuit configured to supply a reference potential to the negative input terminal of the first comparator, and a second bias circuit configured to supply a reference potential to the negative input terminal of the second

comparator.

8. A data receiving apparatus for receiving and demodulating data modulated in a pseudo-ternary form which is transferred over signal line pair in which a transformer is inserted, the data modulated in the pseudo-ternary form taking either of the three values: a first value by which current is allowed to flow in a positive direction in the transformer; a second value by which current is allowed to flow in a negative direction in the transformer; and a third value by which no current is allowed to flow in the transformer, comprising:

a first comparator configured to make a comparison between potentials on the paired signal lines connected with the secondary winding of the transformer to produce a signal indicating whether data of the first value has been received or not;

a second comparator configured to make a comparison between potentials on the paired signal lines connected with the secondary winding of the transformer to output a signal indicating whether data of the second value has been received or not;

a first toggle circuit, connected to the first comparator, configured to be triggered each time the first comparator produces a signal indicating the reception of data of the first value, and to change its output state from one of logic levels 0 and 1 to the

other;

a second toggle circuit, connected to the second comparator, configured to be triggered each time the second comparator produces a signal indicating the reception of data of the second value, and to change the output state from one of logic levels 0 and 1 to the other;

a first detector configured to sample the output signal of the first toggle circuit at regular sampling intervals and to compare the value of the current sample with the value of a sample of one sampling interval before to produce a signal indicating whether an output signal indicating the reception of data of the first value has been produced from the first comparator;

a second detector configured to sample the output signal of the second toggle circuit at the regular sampling intervals and to compare the value of the current sample with the value of a sample of one sampling interval before to produce a signal indicating whether an output signal indicating the reception of data of the second value has been produced from the second comparator; and

an output circuit connected to receive the output signals of the first and second detectors, configured to produce demodulated data corresponding to the data modulated in the pseudo-ternary form.

9. A data transfer system for transferring data modulated in a pseudo-ternary form over signal line pair in which a transformer is inserted, the data modulated in the pseudo-ternary form taking either of the three values: a first value by which current is allowed to flow in a positive direction in the transformer; a second value by which current is allowed to flow in a negative direction in the transformer; and a third value by which no current is allowed to flow in the transformer, comprising:

a first electronic equipment transferring the data modulated in pseudo-ternary over the signal line pairs; and

a second electronic equipment receiving and demodulating the data modulated in the pseudo-ternary form transferred over the signal line pair,

the second electronic equipment comprising:

a first comparator configured to make a comparison between potentials on the paired signal lines connected with the secondary winding of the transformer to produce a signal indicating whether data of the first value has been received or not;

a second comparator configured to make a comparison between potentials on the paired signal lines connected with the secondary winding of the transformer to output a signal indicating whether data of the second value has been received or not;

a first detector configured to sample the output signal of the first comparator at regular sampling intervals and to compare the value of the current sample with the value of a sample of one sampling interval before to produce a signal indicating whether an output signal indicating the reception of data of the first value has been produced from the first comparator;

a second detector configured to sample the output signal of the second comparator at the regular sampling intervals and to compare the value of the current sample with the value of a sample of one sampling interval before to produce a signal indicating whether an output signal indicating the reception of data of the second value has been produced from the second comparator; and

an output circuit connected to receive the output signals of the first and second detectors, configured to produce demodulated data corresponding to the data modulated in the pseudo-ternary form.

10. A data receiving device for receiving data modulated in a pseudo-ternary form which is transferred over signal line pair in which a transformer is inserted, the data modulated in the pseudo-ternary form taking either of the three values: a first value by which current is allowed to flow in a positive direction in the transformer; a second value by which

current is allowed to flow in a negative direction in the transformer; and a third value by which no current is allowed to flow in the transformer, comprising:

a first data receiver which makes a comparison between potentials on the paired signal lines connected with the secondary winding of the transformer to produce a signal indicating whether data of the first value has been received or not, then samples the signal at regular sampling intervals and produces a signal indicating the presence or absence of the reception of data of the first value on the basis of the value of the current sample and the value of a sample of one sampling interval before;

a second data receiver which makes a comparison between potentials on the paired signal lines connected with the secondary winding of the transformer to produce a signal indicating whether data of the second value has been received or not, then samples the signal at regular sampling intervals and produces a signal indicating the presence or absence of the reception of data of the second value on the basis of the value of the current sample and the value of a sample of one sampling interval before; and

an output circuit connected to receive the output signals of the first and second receivers, configured to produce demodulated data corresponding to the data modulated in the pseudo-ternary form.

11. A data receiving method for receiving data modulated in a pseudo-ternary form which is transferred over signal line pair in which a transformer is inserted, the data modulated in the pseudo-ternary form taking either of the three values: a first value by which current is allowed to flow in a positive direction in the transformer; a second value by which current is allowed to flow in a negative direction in the transformer; and a third value by which no current is allowed to flow in the transformer, comprising:

making a comparison between potentials on the paired signal lines connected with the secondary winding of the transformer to produce a signal indicating whether data of the first value has been received or not, then sampling the signal at regular sampling intervals and producing a first detecting signal indicating the presence or absence of the reception of data of the first value on the basis of the value of the current sample and the value of a sample of one sampling interval before;

making a comparison between potentials on the paired signal lines connected with the secondary winding of the transformer to produce a signal indicating whether data of the second value has been received or not, then sampling the signal at regular sampling intervals and producing a second detecting signal indicating the presence or absence of the

reception of data of the second value on the basis of the value of the current sample and the value of a sample of one sampling interval before; and

producing demodulated data corresponding to the data modulated in the pseudo-ternary form, in accordance with the first and second detecting signals.